

Textbook Assignment: "Steelworker Tools and Equipment," pages 12-1 through 12-15.

Learning Objective: Describe the principles and techniques for operating and maintaining tools used by Steelworkers in the shop and field.

8-1. Work that does not require great accuracy and is accomplished on a bench or pedestal grinder is known as what type of grinding?

1. Free hand
2. Precision
3. Off hand
4. Offset

8-2. What advantage is gained by flooding the wheel on a wet type of grinder?

1. The wheel will not become brittle
2. The chips and cracks are made easy to find
3. Fire hazards are totally eliminated
4. The wheel and work are kept cool and clean

8-3. Tool rests on a grinder must always be used and properly adjusted to prevent what problem from occurring?

1. Work becoming wedged between the rest and the wheel
2. Fingers being caught in the wheel
3. Clothing getting caught in the wheel
4. Sparks and dust obscuring the view of the work

8-4. Grinding wheels can be sources of danger and must be checked periodically for irregularities and soundness. To test the wheel, you suspend it on a string or wire and tap it with a metal rod. A solid wheel gives off a clear ringing sound.

1. True
2. False

8-5. When using a wheel dresser, you should never take which of the following actions?

1. Remove the glaze from the wheel
2. True the wheel
3. Put the flat surfaces on the sides of the wheel
4. Bring the wheel back to round

8-6. Because doing so will clog the wheel, you should never shape which of the following metals on an abrasive wheel?

1. Gray cast iron
2. High carbon steel
3. Aluminum
4. Tungsten

8-7. Which of the following actions should you take before using a pneumatic tool?

1. Inspect the air hose for leaks or damage
2. Blow air through the air hose to free it of foreign material before connecting it to the tool
3. Keep the air hose clean and free of lubricants
4. All of the above

8-8. Compressed air comes directly in contact with valves and pistons in pneumatic hammers and causes which of the following conditions to occur?

1. Rust formations in the valves
2. Lubricants evaporate from the system
- 3* Lubricants are driven out of the exhaust
4. Lubricants become contaminated with moisture

- 8-9. Which of the following steps must be taken when working continuously with a pneumatic tool on a compressed air system not equipped with a filter, a regulator, and a lubricator assembly?
1. Stop hourly, disconnect the hose, and squirt a few drops of heavy oil into the hose connection
 2. Stop twice daily, disconnect the hose, and squirt a few drops of light oil into the hose connection
 3. Every morning before starting, squirt as much oil as you can into the hose connection
 4. Disconnect the hose every hour or so and squirt a few drops of light oil into the hose connection
- 8-10. What lubricant must be used to clean a pneumatic tool that has become gummed up and dirty from heavy oil?
1. Kerosene
 2. Cleaning solvent
 3. Gasoline
 4. Diesel fuel
- 8-11. What other task does the combination iron worker perform in addition to shearing, coping, notching, and mitering?
1. Straightening bends
 2. Punching holes
 3. Cutting circles
 4. Bending rebar
- 8-12. The maximum capacity of a material that can be safely handled by a combination iron worker is found at what location?
1. On the supervisor's checklist
 2. At designated sites
 3. On the capacity plate
 4. On the material handling cards
- 8-13. The vertical band saw is primarily used to make curved cuts; however, it is frequently used for what other type of cutting?
1. Design
 2. Off hand
 3. Machine
 4. Straight
- 8-14. On a band saw, the mechanism that adjusts and controls the alignment and tensioning of the blade is at what location?
1. On the blade guides
 2. On the lower wheels
 3. On the upper wheels
 4. On the worktable
- 8-15. What is the smallest size band saw manufactured?
1. 12 inches
 2. 14 inches
 3. 16 inches
 4. 18 inches
- 8-16. Which of the following values do you add to the circumference of one wheel to determine the required length of a vertical band saw blade?
1. Twice the distance between the wheel centers
 2. The distance between the wheel centers
 3. Twice the tension adjustment range
 4. Tooth points per inch by thickness by gauge
- 8-17. What factor determines the size of the radius of the curves and circles you can cut with a vertical band saw?
1. The number of teeth per inch of blade
 2. The thickness of the material being cut
 3. The speed of the blade
 4. The width of the blade
- 8-18. When making identical cuts on multiple pieces at the same time on a band saw, you must follow what procedure?
1. Put them in a jig
 2. Clamp them together
 3. Tack-weld them together
 4. Increase the blade speed
- 8-19. Which of the following blades can be reconditioned by the same procedures that are used for a band saw blade?
1. A hacksaw
 2. A circular saw
 3. A hand rip saw
 4. A chain saw

- 8-20. Which of the following processes do you use to repair a broken band saw blade when there is no accessory welder available?
1. The soldering
 2. The riveting
 3. The overlapping
 4. The brazing
- 8-21. Why must you anneal a band saw blade again after grinding the weld bead off a butt-welded blade?
1. To achieve uniform thickness alignment
 2. To remove burrs and correct alignment
 3. To remove any hardness that has developed while grinding
 4. To retemper the band saw blade
- 8-22. When working on a band saw and the blade breaks, you should take what action first?
1. Step clear of the machine
 2. Pull the piece clear you are working on
 3. Attempt to guide the broken piece out of the machine
 4. Immediately shut off the power
- 8-23. What shop tool is gradually being replaced by the horizontal band cutoff saw due to its increased speed, accuracy, and versatility?
1. The vertical band saw
 2. The reciprocating power hacksaw
 3. The power shear
 4. The unishear
- 8-24. What is the minimum number of teeth that should be in contact with the work when band sawing metals?
1. One
 2. Two
 3. Three
 4. Four
- 8-25. Which of the following materials can be cut with a power hacksaw?
1. Bar stock
 2. Tubing
 3. Pipe
 4. All of the above
- 8-26. What are the two types of power hacksaws?
1. High speed and low speed
 2. Forward and reverse action
 3. Mechanical and hydraulic drive
 4. Vertical and horizontal feed
- 8-27. What does "the pitch of the teeth" mean in relation to the selection of band saw blades or hack saw blades?
1. The forward and reverse angle of the teeth
 2. The number of teeth per inch
 3. The width of the cutting area
 4. The distance the blade can twist without affecting the cut
- 8-28. You are using a reciprocating power hacksaw. What feed on the hacksaw will shut off automatically if a hard spot is hit?
1. The hydraulic
 2. The gravity
 3. The mechanical
 4. The pneumatic
- 8-29. How can you determine the speed of a power hacksaw?
1. Count the forward strokes
 2. Count the reverse strokes
 3. Count the strokes per minute
 4. Count the strokes per minute that contact the material
- 8-30. Which of the following materials can be cut without using a coolant?
1. Solid brass
 2. Rolled aluminum
 3. Cast iron
 4. Cold rolled steel
- 8-31. Why are belts almost always used instead of gears on a sensitive drill press?
1. Gears cause excessive vibration which eliminates the "feel"
 2. Belts are stronger than gears
 3. Belts require little maintenance
 4. Gears are too heavy
- 8-32. Which of the following factors makes a radial drill press convenient to use on work where many holes must be drilled?
1. The ease the chuck can be swung out of the way
 2. The work does not have to be readjusted for each hole
 3. Adjust the drill base easily to drill all holes
 4. Drill holes horizontally

- 8-33. You have completed a preoperational safety inspection of a drill press; however, after it is started, you still should be alert for
1. frayed v-belts
 2. loose locking handles
 3. frayed electric cords
 4. squeaks or unusual noises
- 8-34. The size of a drill bit can be indicated by which of the following designators?
1. Letters
 2. Inches in diameter
 3. Numbers
 4. Each of the above
- 8-35. Which of the following cutting oils/cooling fluids reduces heat, overcomes rust, and improves the finish on ferrous metals?
1. Mineral oil
 2. Kerosene
 3. Soda water
 4. Motor oil
- 8-36. When reshaping a badly worn drill bit that has become overheated by accident, you should take which of the following actions?
1. Dip it in cool water
 2. Cool it with compressed air
 3. Dip it in oil
 4. Cool it in still air
- 8-37. What results when you use a drill bit you repointed but allowed too little lip clearance on it?
1. It will rub without penetration
 2. It will gouge material
 3. Its cutting action is increased
 4. It will break easily
- 8-38. What results when you bore holes with a drill bit whose lip length and lip angles are improper?
1. Tapered holes
 2. Angled holes
 3. Oversized holes
 4. Undersized holes
- 8-39. What shape are the chips that come from a hole that has been drilled in soft metal with a drill bit that was sharpened properly?
1. Long curled chips of unequal size
 2. Long straight chips of equal size
 3. Short tightly curled spirals
 4. Curled spirals of equal length
- 8-40. Air compressors have a system for taking in air and exhausting it at a much higher pressure. This is accomplished by compressing the air through a process known by what term?
1. Reduction in volume
 2. Pumping action
 3. Compaction
 4. Flow reduction
- 8-41. Air compressors in the field have a pressure control system that is governed to allow how many pounds of pressure?
1. 200 psi
 2. 150 psi
 3. 100 psi
 4. 50 psi
- 8-42. The terrain or activity on a construction site may not allow a compressor to be placed near the actual work. For this reason, you should remember that air line hoses suffer a considerable loss in pressure beyond what distance?
1. 150 feet
 2. 200 feet
 3. 250 feet
 4. 300 feet
- 8-43. A manifold compressor system that has a pipe 6 inches in diameter and 100 feet long can carry a total of how many cubic feet of air per minute?
1. 900 cfm
 2. 1,000 cfm
 3. 1,100 cfm
 4. 1,200 cfm
- 8-44. When operating an air compressor, you must keep it within the 15-degree out-of-level limits for what reason?
1. To prevent stress on the compressor drive shaft
 2. To prevent it from rolling without blocking
 3. To prevent the starting torque from turning over the compressor
 4. To maintain the proper engine crankcase and compressor oil levels

- 8-45. When starting the engine of an air compressor, you should open the service valves to what position to hasten the warm-up of the compressor oil?
1. The one-quarter OPEN position
 2. The half-OPEN position
 3. The three-quarters OPEN position
 4. The fully OPEN position
- 8-46. For what reason are both side curtains of the engine enclosure of an air compressor kept in the OPEN position when the engine is running?
1. To help detect engine malfunctions
 2. To maintain an air flow through the oil cooler and radiator
 3. To place the engine preheat switch within easy reach
 4. To simplify mechanical adjustments
- 8-47. For how many minutes should the engine and compressor operate before you close the service valve and connect the tool hoses?
1. 10
 2. 8
 3. 6
 4. 5
- 8-48. In cold weather conditions, what should you do to aid the warm-up of an air compressor?
1. Run it wide open for a couple of minutes
 2. Open the service valves wide open
 3. Leave the side curtains closed for a few minutes
 4. Close all valves for 5 minutes
- 8-49. You must lubricate an air compressor according to the instructions maintained in what location(s)?
1. The crew leader's instruction or SOP book
 2. On the instruction plate or in the operator's manual
 3. Notices and instructions maintained by the mechanic
 4. Your own notes from past inspections
- 8-50. The drain cocks on all air compressor field units must be opened for what reason?
1. To drain excess oil
 2. To relieve air pressure
 3. To drain condensation
 4. To expel dust
- 8-51. In addition to shortening construction time, what is another advantage of using a blind rivet on pre-engineered metal buildings?
1. Eliminates the need for a bolting crew
 2. Eliminates the need for scaffolding
 3. Eliminates the need for tag lines
 4. Eliminates the need for a drilling crew
- 8-52. What type of action does the blind rivet installation tool produce to compress the blind rivets after they are inserted into their holes?
1. A combined holding and hammering action
 2. A combined clamping and crimping action
 3. A combined vibrating and crushing action
 4. A combined reciprocating and pulling action